CHAPTER 9C

TERRAZZO; CERAMIC AND QUARRY TILE

9C-01 GENERAL

a. References

(1) As noted from the INDEX, there is a variety of terrazzo materials which are described in the MATERIALS paragraph. Likewise, the various methods and materials for setting and grouting ceramic and quarry tiles are given.

(2) You should have the references describing tile installation available to determine and check the required methods for acceptable work. Most are American National Standards Institute (ANSI) publications.

(3) The latest issue of common use references should be in the field office library. Your request for other needed publications should be made well in advance of the preparatory inspection meeting.

(4) Check Chapter 9A for the lath and plaster requirements for the wet wall base for ceramic tile.

(5) When a thin (1/8 inch) mortar bed such as dry-set or resinous material is planned for tile, the substrate must be within required smoothness tolerances.

(6) The National Terrazzo and Mosaic Association (NTMA) specification is needed for terrazzo floors as there will be direct references to this specification in the project specifications.

b. Submittals

(1) Samples shall be received as required in the colors and patterns given in the finish schedule on the drawings.

(2) Bonded terrazzo application requires certificates of compliance for conductive and resinous mortars and grout.

(3) Resinous terrazzos require certified teat reports, manufacturers descriptive and application data and maintenance literature.

(4) Check for shop drawings which show layout of all accessories.

(5) Check the applicator contractor*s qualifications as required by the specifications.

9C—02. MATERIALS

a. Bonded Terrazzo. This is portland cement base material with a total thickness of 1-3/4 inches — 1-1/4 inch underbed and a ½ inch topping.

b. Resinous Terrazzo. A thin (about 1/4 inch) resinous base material which is applied to finished, hard rock concrete.

The resinous flooring system specified could be one of the following:

Epoxy
Polyacrylate
Polyester
Synthetic Latex Mastic or Resin Emulsion

c. Conductive Resinous Terrazzo. Same as above except six includes acetylene carbon black powder to impart conductance. Matrix is black color. Thickness is 1/4 or 3/8 inch depending on resin system selected. Check your specifications.

d. Industrial Resinous Terrazzo. Same as for resinous terrazzo. The resin system specified will depend on exposure conditions. These systems are intended for floors of biological laboratories and similar hard wear areas.

e. Sparkproof Industrial Resinous Terrazzo. Similar to conductive resinous terrazzo except that formulation is intended for hard use areas in explosive or volatile flammable liquid atmospheres.

f. Ceramic Tile. Standard grade per Tile Council of America (TCA) standard specification. Check for required glazed or unglazed finish surface.

g. Quarry Tile. Check grade per TCA standard specification. Also whether smooth or abraded unglazed surface finish is required.

h. Mortar for Tile Setting. The following may be specified:

(1) Plastic mortar bad of sand and portland cement mix. See ANSI A108.1.

(2) Dry-set mortar of pre-mixed material, water added; for use over cured mortar (plaster) bed or required concrete or masonry. See ANSI A108.5

(3) Resinous; either epoxy or furan material for special use areas. Check the finish schedule.

i. Adhesive for Tile Setting. A pre-mixed material conforming to ANSI A108.4 and used in dry areas over gypsum wallboard.

j. Grout

(1) Pre-mixed using white portland cement for ceramic tile. May be job mixed with gray cement for quarry tile.

(2) Pre-mixed, either epoxy or furan resin, for special use areas.

k. Metal Lath. Use to reinforce the setting bed for wall tile. Expanded metal lath weighing 3.4 pounds per square yard.

l. Reinforcing Wire Fabric. Use to reinforce the concrete fill, when required, for floor setting bed. Either 2 by 2 inch, 16 gage, or 1-1/2 inch, 16 and 13 gage wire.

m. Terrazo Accessories

(1) Aggregate. Check for blend of chips (1/8-1/4) in accordance with NTMA No. 1 requirements. Marble chips usually specified except that granite chips may be specified to increase stain and acid resistance.

(2) Divider Strips. May be brass, white zinc alloy or plastic. (Brass and plastic may react with resinous materials.) Check your specifications for material and gauge thickness.

(3) Control and Expansion Joint Strips. Special "sandwich" shapes for use at joint locations in the substrate. A neoprene filler material, or a temporary filler removed for sealant, is part of the preformed joint material. Check NTMA Specifications for details.

(4) Primer, Binder and Filler. Materials required in resinous terrazzo mix as recommended by the binder manufacturer.

(5) Grout. As required and recommended by the manufacturer of the resin.

(6) Curing Materials. Portland cement terrazzo cured with wet sand, waterproof sheet or liquid membrane curing compound.

(7) Cleaner and Sealer. As recommended for terrazzo by the material manufacturer. Sealer is a penetrating type.

9C-03. PREPARATION

a. Storage Check container labels on arrival for matching information with that submitted in manufacturer*s data. Storage must be in a protected location to prevent freezing.

b. Temperature. Check your specifications. Minimums may be 50 degrees F or 60 degrees F, depending on system specified.

c. Substrate.

(1) Check Chapter 9A for cement plaster application for wall tile.

(2) Plaster finish will depend on tile setting method; rough finish for bond with plastic mortar bed and trowel finish to required tolerances for dry-set mortar bed.

(3) Check for adequate curing of plaster.

(4) Check for use of curing compound on the concrete base. It must be completely removed for proper bond.

(5) Correct defects in concrete. Allowable smoothness tolerance is 1/8 inch in 10 feet to receive the dry-set and thin-set systems. Has concrete aged for required period of time?

(6) Check surface finish. It may be trowel, light broom or float finish, depending on terrazzo system to be applied.

(7) For tile, the substrate must be within 2 inches of finish floor elevation. If not, a reinforced concrete fill is required.

(8) Check the specifications for concrete fill mix proportions and reinforcement laps.

(9) Discontinue reinforcement fabric at control and expansion joints.

(10) Check the shop drawing for grounding grid in conductive finish floors.

(11) Check underbed for low-slump mix for portland cement bonded terrazzo system.

(12) Check divider strip layout for terrazzo from approved shop drawings. (Don*t use "T* strips over joints in the substrate.)

(13) Are you ready for installation?

d. Tests. Certified test reports with required results for the resinous flooring system should have been received and reviewed.

9C-04. INSTALLATION

a. Bonded Terrazzo.

(1) Check mix proportions and color. Will the topping thickness be the required minimum? Make a final check on divider strip depth.

(2) Nest cement paste is required directly over underbed surfaces.

(3) Do the specifications require seeding with aggregate chips? Rolling until excess water is removed? Trowel finish using divider strips as screeds?

(4) Check curing requirements.

(5) Finishing process is described in the specifications for rough grinding, grouting, curing and fine grinding.

(6) A smooth, level surface with a minimum of swirl marks should be the result of a first class finish.

(7) Check the cleaning and sealing and protection required.

b. Resinous Terrazzo.

(1) Requirements are given in the data submitted by the manufacturer.

(2) Are divider strips at indicated location and depth to produce required thickness for these thin-set floor finishes?

(3) Check preparation of cast-in-place cove base, where required.

(4) Are the control and expansion strips placed exactly at the same joint locations in the substrate?

(5) Check the mixing and placing instructions of the resin manufacturer for actual conformance with work to be performed.

(6) The sequence of grinding, grouting, curing and finish grinding is important for quality work. See that these steps are accomplished in turn.

c. Ceramic Tile.

(1) Install wall tile before floor tile.

(2) Check for symetrical layout such that no tile course is less than one—half tile width.

(3) Tile wainscot height shall be to nearest full course dimension.

(4) Check for required caps, corners and other trimmer tile. Check for accessories.

(5) Where resinous grout is scheduled, rake joints clean and check grout manufacturer*s instructions for neutralizing joints and application of grout.

(6) Contractor must sequence tile setting so that mortar bed does not set or dry before laying tile.

(7) Check for required conductive dry—set mortar. See ANSI A118.2.

(8) Check size and height of marble thresholds. Fully grouted head joints at ends shall be not more than 1/4 inch wide.

(9) Check for required control joints in walls and floors. Tile control joints shall be installed exactly over these type joints in the substrate material.

(10) Clean and protect finished work as specified.

d. Quarry Tile

(1) Check quarry tile layout for alignment and joint width.

(2) Check for abrasive surface finish. See the finish schedule.

(3) Resinous mortar and grout shall be mixed and applied in accordance with manufacturer*s instructions.

9C-05. ACCEPTANCE TESTING

a. Conductive tile and terrazzo will be tested in accordance with provisions in National Fire Protection Association (NFPA) Standard No. 56A.

b. The resistance test determines conductivity. A qualified technician shall perform the tests. Written test results will be furnished.

c. Spark resistance tests and conditions are described in the specifications. Written test results will be furnished.